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ABSTRACT

This paper examines what the World Wide Web has to offer persons who work in education, employment and training, and career development. The guide is designed for the following purposes: (1) to provide "hot lists" of significant career and occupational information resources on the Web, with brief descriptions of what they offer and information on how to find them quickly; (2) to present online specific strategies and techniques to use in exploring the Web for topics and sites of interest; (3) to encourage greater use of the Web to obtain resources that might not be available or accessible in other ways; (4) to encourage users to evaluate Internet resources, based on their needs and applications, to determine their usefulness and appropriateness; and (5) to introduce beginning users to some pertinent Internet concepts and terminology. The guide is organized in three chapters. Chapter 1 briefly introduces key concepts and tools that will help the reader to go online. Chapter 2 provides a concise but wide-ranging list of job search and career information and career development Web sites. Chapter 3 explores some sites that feature labor market, economic, and education data. (KC)

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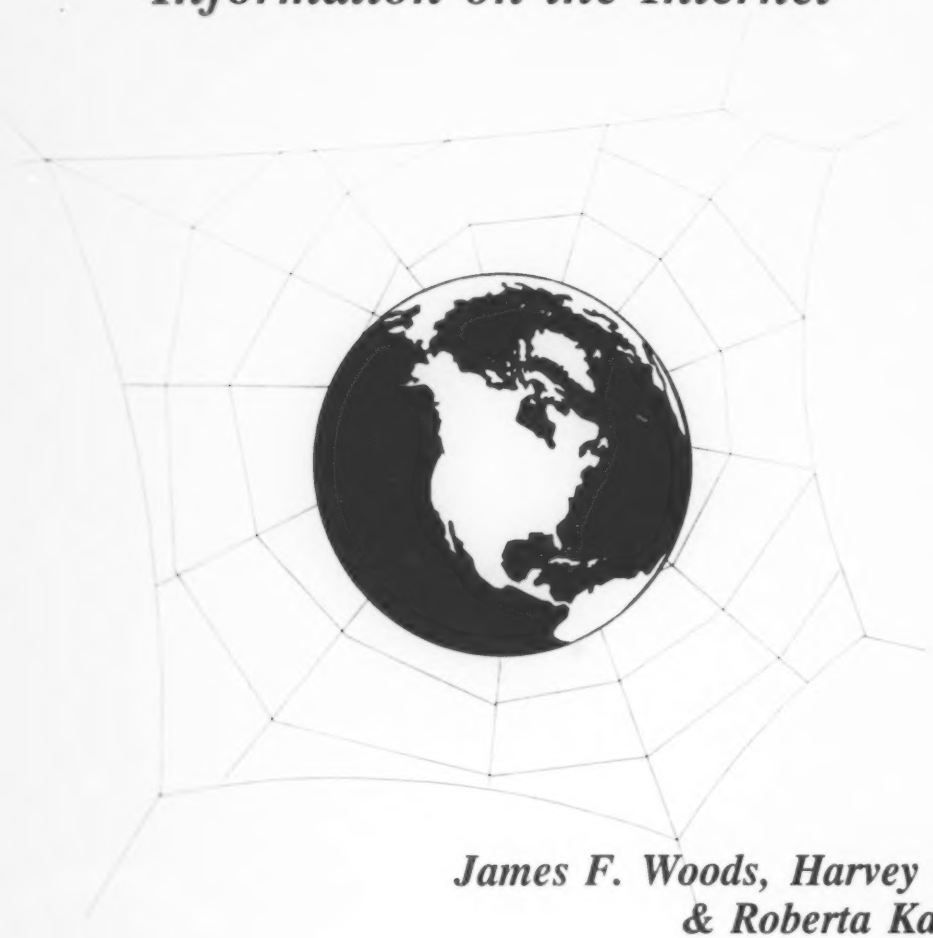
NOICC Occasional Paper 8

To Spin a Web

Job, Career, and Labor Market Information on the Internet



James F. Woods, Harvey Ollis & Roberta Kaplan

May 1996

National Occupational Information Coordinating Committee

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NOICC Occasional Paper 8

To Spin a Web

Job, Career, and Labor Market Information on the Internet

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May 1996

National Occupational Information Coordinating Committee

The NOICC/SOICC Network

The National Occupational Information Coordinating Committee (NOICC) promotes the development and use of occupational, career, and labor market information. Established by Congress in 1976, it functions as a federal interagency coordinating committee. Its members represent ten agencies within the U.S. Departments of Labor, Education, Commerce, Agriculture, and Defense.

NOICC works with a network of State Occupational Information Coordinating Committees (SOICCs), also established by Congress in 1976, who play a similar role at the state level. SOICC members represent state vocational education boards, vocational rehabilitation agencies, employment security agencies, job training coordinating councils, economic development agencies, and representatives from higher education and other state agencies.

The work of the NOICC/SOICC Network is based on three integrated themes. The first concerns the development, delivery, and use of occupational, labor market, and career information. The second centers on the linkage of education and work through career development. The third involves training in the development, delivery, and use of data for planning, guidance, and career development purposes.

Because they form an integrated Network, representing a broad range of developers and users of occupational and labor market information and career development programs, NOICC and the SOICCs can foster coordination and communication in a systematic way. They work within a larger federal/state network, bringing together different federal and state efforts and programs. NOICC works with SOICCs and others in the broader network to develop various occupational information programs and systems. These are implemented by the SOICCs and their member agencies and used at the state and local levels. Some provide data to help in planning vocational education and job training programs. Others offer information for individuals who are exploring careers or making decisions about their future education and work. Still others address needs for training among professionals working with the information systems and career development.

Authors of NOICC Occasional Papers are encouraged to express their professional judgments. The analysis, interpretation, and opinions expressed in this document do not necessarily represent the official position or policy of NOICC members or their representatives, or the NOICC staff, and no official endorsement should be inferred.

Table of Contents

Acknowledgements iv

Foreword v

To Spin a WWWeb of Career and Labor Market Information: Introduction . . . 1

1 — Web-ster's Abridged: Tips for Beginning Spinning 5

2 — Career and Job Information on the Web 15

3 — Labor Market and Education Data Resources on the Internet 25

Conclusion: Consider This Precious Resource 38

List of Internet Sites and Addresses 40

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Jim Woods is Coordinator of Occupational Information Systems at NOICC. Harvey Ollis is a NOICC Occupational Information Systems Specialist. Both have extensive experience in designing and developing occupational and career information delivery systems and training programs, beginning with early prototypes and initiatives launched almost 20 years ago. Both have been fascinated by the growth of the Internet and its potential for improving user access to integrated job, career, and labor market information. Roberta Kaplan is a newly wired Web-ster and freelance writer/editor who has produced a wide variety of publications for NOICC.

The authors wish to acknowledge, in particular, the contribution of Steve Rosenow and Rich Knapp, of NCDC, in designing the NOICC home page and maintaining hyperlinks to the career, job, and labor market information resources mentioned in this paper. Many other NOICC and SOICC staff contributed ideas and suggestions for the NOICC home page and/or the text of the paper.

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Foreword

Within the past two years, the Internet has become a household word. The nightly news ends with the network's World Wide Web address. E-mail is used routinely for letters to the editor, the Congress, and the President. Radio ads proclaim ever decreasing prices for online connections, and everyone talks about surfing the Net.

In this NOICC Occasional Paper, we look briefly at what the World Wide Web has to offer those of us who work in education, employment and training, and career development. As our authors note, the Web is a treasure trove of information about the labor market, educational and employment opportunities, jobs and careers. They describe various types of resources already on the Web and call attention to some noteworthy examples. They also encourage users to evaluate any Web site in terms of their own specific needs and purposes.

In conjunction with this publication, the NOICC Crosswalk and Data Center has put a NOICC home page on the Web, with hyperlinks to useful labor market, education, job, and career information sites. Like many other Web pages, it is a work in progress, with some elements still under construction. Others will change frequently, as the Web itself changes, new sites come online, and others move to new addresses. NOICC's Career Development Training Institute is organizing a virtual library that will soon be online. Many State Occupational Information Coordinating Committees also have Web sites, some of which are described in the following paper.

This spring, NOICC and SOICC staff met to discuss program priorities for the coming year and form resource groups to work on them. "Technology and the Internet" is among the six topics selected. The resource groups will identify key issues and propose strategies to address them. Certainly, where the Internet is concerned, such issues abound. Other resource groups will also be considering how the Internet might be used to achieve their goals and objectives.

Currently the World Wide Web is a challenging, exciting, and sometimes perplexing place to visit. Small wonder that many members of the NOICC/SOICC Network are captivated by the possibilities it offers as a delivery system for job, career, and labor market information. *That the Web is still open to change gives our Network an opportunity to participate in shaping the quality and kind of information it offers.* In so doing, we must keep in mind our commitment to helping information consumers understand resources that can help them make informed decisions about job, career, and educational opportunities.

Years ago, counselors and educators observed that information served up on a computer gained a certain amount of credibility simply because it was on a computer. So, too, with the Internet. Yet one should not assume that information posted on the Web is thereby guaranteed authentic and reliable. Web surfers, like any other information consumers, must exercise judgment about the quality and usefulness of what they find there.

We are a customer-oriented Network. Our occupational and career information products and services are designed with specific users' needs in mind. Certainly we should help our constituents take advantage of what the World Wide Web has to offer. We also should continue to explore how we can use the Internet to create wider access to occupational and career information tailored to specific users' needs. This does not mean abandoning other successful delivery systems, products, and training that serve our citizens well. Today the Internet is a household word, but a majority of U.S. households are not yet online. Even if access to the Net becomes as universal as the telephone, the need for information in a variety of formats — books, newspapers, tapes, disks — will continue. The Web offers a promising new avenue for reaching millions of Americans who need information on jobs, careers, education, and the labor market.

Juliette Lester
Executive Director

To Spin a WWWeb Of Career and Labor Market Information

Casting a Wide Net

In the last two years, the Internet has burst into the public spotlight, riding the crest of the "information age." Once the domain of computer scientists, defense experts, and academics, the Internet is nearly 25 years old. Yet it is still in its infancy as a resource for the general public. That infant is growing rapidly in popularity, complexity, and size.

Today the Internet is expanding at an explosive rate, both in terms of the quantity of information being added to it and in the number of users that access it. Its growth has been fueled by the development of the World Wide Web and advances in computer and communications technology. It has also been sparked by expanding interest on the part of business, education, government, and the public in more timely information and faster, wider communication.

Hype aside, just what can the Internet do for people who work in education, employment and training, and career development? Put simply, it's a treasure trove of labor market, job search, and career development resources. Some can be used in counseling, teaching, or training — others in job development and job search assistance. Some can be helpful in developing occupational and career information systems and materials, others in analyzing the economy or the labor market. And for job-seekers, it offers new avenues and approaches, not to mention online listings of résumés and employment openings.

Untangling the Web

One of the challenges (and pleasures) for Net surfers is finding and sorting through the vast and ever growing array of resources available on the World Wide Web. Sometimes the amount of information can be overwhelming. As one cyberpundit has said, "You often don't know where to find something. You may not even know where you're going or how you'll eventually get there. And you rarely know how valid the information you

turn up really is."[1] Not surprisingly, the Web has acquired a certain amount of clutter as its popularity has grown. Yet with a few basic pointers, it is relatively easy to find the gems, especially if you're already well versed in a discipline or field of interest.

This brief guide is designed to help readers sort through the Web's offerings and consider how they might be used in job searches, career exploration, and labor market analysis. We hope this focus will help counselors, employment and human resource development workers, labor market information specialists, educators, researchers, and others find and learn how to use pertinent resources available through the Internet in general and the Web in particular. More specifically, this paper is designed to:

(1) Provide "hot lists" of significant career and occupational information resources on the Web, with brief descriptions of what they offer and information on how to find them quickly;

(2) Outline specific strategies and techniques to use in exploring the Web for topics and sites of interest;

(3) Encourage greater use of the Web to obtain such resources, many of which would otherwise be unavailable, or at least not very accessible;

(4) Encourage users to evaluate Internet resources, based on their needs and applications, to determine their usefulness and appropriateness; and

(5) Introduce beginning users to some pertinent Internet concepts and terminology.

This guide is not a "cookbook." The flexibility and exponential growth of the Net makes that impossible; indeed, it would be contrary to the very nature and strengths the Net affords. But acquiring some techniques can help us identify interesting and useful resources more efficiently.

Chapter 1 of this paper briefly introduces key concepts and tools that will help you in your online excursions. Many books describe the Internet in detail, and we encourage you to consult some that address your needs. But there are relatively few concepts and issues that you must be aware of to become a successful Web surfer (success being measured in how well one can identify, access, and use the Web's offerings). Chapter 1 highlights some fundamental features.

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[1] Shannon, V. "Rumors of the Death of On-Line Services May Be Exaggerated," Washington Business, *The Washington Post*, February 5, 1996, p. 14.

Chapter 2 provides a concise but wide ranging list of job search and career information and career development Web sites. Some are designed primarily for the career counseling and human resource development professions. Others focus on resources for individuals searching for jobs or career direction. Career development specialists and other human service workers also may find the latter useful in their work with clients.

Chapter 3 explores some Net sites that feature labor market, economic, and education data. These sites may be of particular interest to professionals who develop or use labor market information for planning and analysis. The number of sites reviewed is relatively small, but they offer an immense range and amount of information.

Updating Addresses

Internet addresses for the sites mentioned in this paper are listed at the end of the document. However, given the speed of the Internet's expansion, with literally millions of new resources being added monthly, printed documents about it tend to age quickly. Some of the addresses undoubtedly have changed. When this happens, a forwarding address is usually posted at the former site.

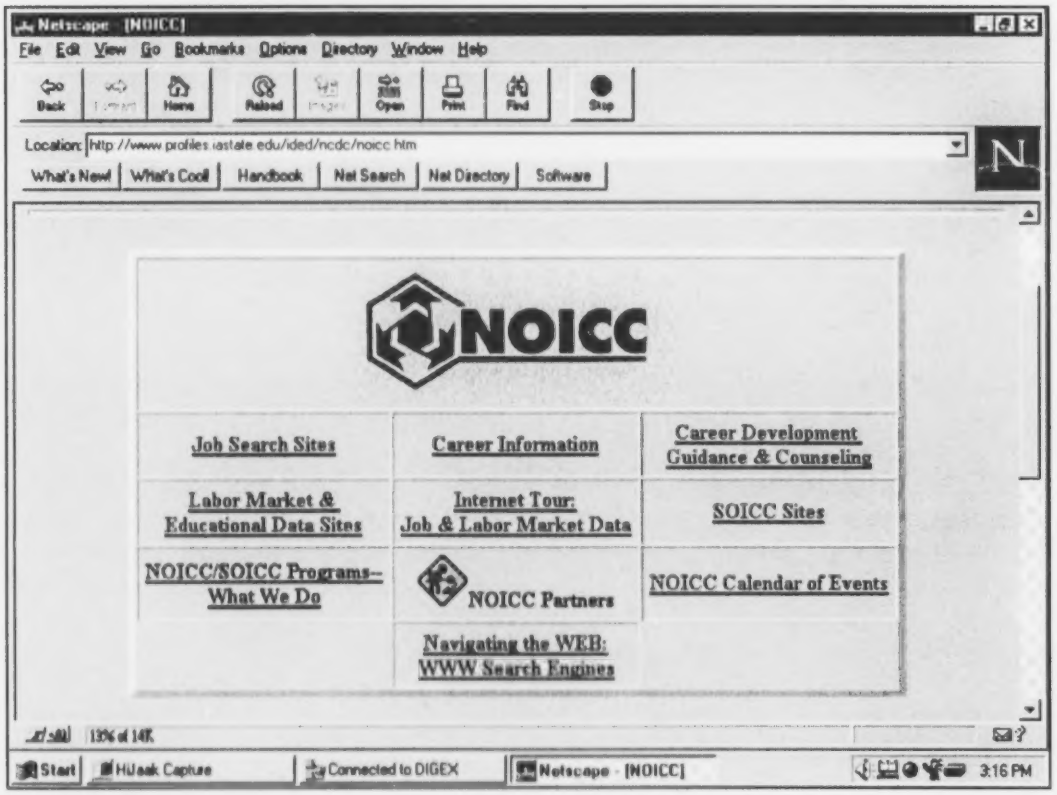
NOICC is maintaining a home page on the World Wide Web. It includes an Internet Tour with hyperlinks to job, career and labor market data sites described in this guide. New addresses and new sites will be added to the home page in its monthly updates. We encourage you to use it as a starting point for your career and occupational information searches and welcome any comments for its improvement (e-mail: noicc@digex.net). The home page is pictured on the next page.

New resources are popping up on the Web every day, and older ones frequently change or grow from one day to the next. A definitive evaluation of the coverage or quality of any particular resource is difficult, if not impossible. While we highlight many sources of career and job information in this guide, the listings are far from exhaustive. Nor does the inclusion of a particular resource imply that it is necessarily the best. We believe the sites we have included are excellent ones. They also illustrate either the types of sites available on the Web or the tools available to you.

As a user, it is crucial that you evaluate resources based on your particular applications and that you occasionally revisit them. As Lester points out, "High-speed information highways enable us to have a wealth of information at our fingertips . . . . But highways in cyberspace have their hazards, too. . . . The user must be sophisticated

enough to understand the data and judge their worth."[2] However, through continued use of the Net and careful review of its offerings, you can spin your own "web" of valuable sites and services.

We hope you enjoy your online explorations and that this modest paper assists in that process. Given the dynamic and global nature of the economy and job markets, information on employment, the economy, and careers has increasing significance. We believe the Internet offers an invaluable delivery system for such information.


Netscape - [NOICC]
File Edit View Go Bookmarks Options Directory Window Help
Back Forward Home Reload Images Open Print Find Stop
Location: http://www.profiles.iastate.edu/ided/ncdc/noicc.htm
What's New! What's Cool! Handbook Net Search Net Directory Software
NOICC
Job Search Sites
Career Information
Career Development Guidance & Counseling
Labor Market & Educational Data Sites
Internet Tour: Job & Labor Market Data
SOICC Sites
NOICC/SOICC Programs--What We Do
NOICC Partners
NOICC Calendar of Events
Navigating the WEB: WWW Search Engines
Start
HUsak Capture
Connected to DIGEX
Netscape - [NOICC]
3:16 PM

[2] Lester, J. 1995. "The Necessary Art of Making Connections" in Hoyt, K. & Lester, *Learning to Work: The NCDA Gallup Survey*, pp. 26-7. Alexandria, VA: National Career Development Association.

Chapter 1

Web-ster's Abridged: Tips for Beginning Spinning

If you are new to the Internet, this chapter offers some basic tips on how to avoid spinning your wheels and start spinning your own information web. If you are already an experienced Web-ster, just skip or skim this chapter and move on to chapter 2 (for job and career information resources) or chapter 3 (for labor market information sites).

Like any new technology, the Internet has generated its own vocabulary and jargon. Some Net terms have already become part of our every day conversation, even among people who don't have an online connection. To use the Internet efficiently, you need to know some of the key concepts and available resources. This chapter introduces those we consider most important for getting started on the World Wide Web.

We do not pretend to cover all features of the Internet. For that, we encourage you to peruse any one (or several) of the ever expanding library of Internet books available on the market. They explain features like newsgroups, e-mail, FTP, and Gopher searches in detail. They also discuss "netiquette," the social customs and manners observed by responsible members of the online community.

In this paper, we have focused primarily on resources available on the World Wide Web, the most popular component of the Internet. By becoming familiar with a few terms and tools, even novices can find a wealth of information on the Web.

What Is the Internet?

In its simplest sense, the Internet is a collection or interconnection of computer networks all over the world — in other words, a network of computer networks. It makes it possible to share information stored on a computer in any given network with users on other networks. This is achieved through communication and information sharing protocols, such as HyperText Transfer Protocol (HTTP) or File Transfer Protocol (FTP).

Beginning users do not need to understand all the details of these protocols to find information on the World Wide Web. But these procedures enable us to obtain information stored half a globe away or just across town. Using a personal computer,

special software, a modem, and an online connection, we can view information on the screen, send e-mail, and download data files. The information itself can take many forms including text, statistical files, graphics, sound, and video.

The Internet itself is nearly 25 years old, though for all practical purposes, access has only been available to most of us for the last few years. Before that, it was the domain of defense specialists, computer scientists, and academics. But new developments in computer and communications technology have enabled a larger spectrum of the public to get connected to the Internet.

Much of the recent growth and burgeoning interest in the Internet has been fostered by the development of the World Wide Web. Many people consider the Web and the Internet as synonymous. However, *the Web is just one component of the Internet*, albeit a very popular and rapidly growing one. Unlike earlier components of the Internet, the Web supports hypermedia (e.g. graphics, sound, and video). With the development of tools such as Web browsers, we can access and view text, sound, graphics, and video more easily. Even nontechnical computer users can browse the Web, leaping from one site to another via colorful hyperlinks. No wonder it's popular.

Tools and Terms

What tools do we need to access the World Wide Web? What new terminology and concepts do we need to understand? Computer users with Windows or Macintosh operating systems can get started on the Web with only a few basic tools and terms. First, the four basic tools:

(1) access to the Internet, probably through an access provider or online service;
(2) a computer with enough capacity to handle the software;
(3) a modem (the faster the better); and
(4) Web browser software, which allows us to access and view Web documents.

Internet Connections

Over the last year, getting access to the Internet has become a much easier process. You may already have a connection through your work or school. If not, you can purchase Internet access for your home or business from a variety of national or regional commercial sources.

One possibility for beginning users is to subscribe to an ***online service***, such as America Online, CompuServe, or Prodigy. For a monthly fee, they offer their members special online features and services, as well as access to the Internet. They also provide basic

installation software, upgrades, and technical support. They have their own Web browsers, e-mail features, and other Internet tools to make forays into cyberspace less bewildering for beginners. Monthly subscriber fees are modest, but may rise quickly for users who want additional hours online.

Another possibility is through ***Internet service providers***. They supply a connection to the Internet, usually via your telephone line and a local number to their computers. They charge a subscriber or user fee, ranging from $10 to $30 a month for basic service, depending on the features and amount of online time desired. Most furnish the basic software and instructions to make your initial connection using your computer and modem; most offer some form of technical support when problems occur. People who want more than a few hours a month of online time should consider these services.

Internet Addresses

Every Internet site has a specific address, called a ***Uniform Resource Locator (URL)***. You can reach any Web site, for example, whether it is housed on a Net computer two blocks down the road or 10,000 miles away, by entering its URL in the appropriate space on your Web browser. While it is not really necessary to understand the structure of a URL to use the Net, it helps to have a basic conception of the URL form. Some examples of URLs for selected sites are listed below:

America's Job Bank	http://www.ajb.dni.us
Bureau of Labor Statistics FTP site:	ftp://stats.bls.gov
CareerNet:	http://www.careers.org
Career Magazine:	http://www.careermag.com
University of Michigan Gopher site:	gopher://una.hh.lib.umich.edu/11/ebb

The first part of the address tells us the particular type of document or protocol for transferring files; three different ones appear in the above examples. URLs for sites on the World Wide Web generally begin with "http." Gopher sites begin with "gopher," and File Transfer Protocol sites begin with "ftp." Let's look at a brief description of each type.

World Wide Web sites are hypermedia documents that are linked to other Web sites through *hyperlinks* imbedded in the document. The *http* in the URL stands for HyperText Transfer Protocol. Hyperlinks allow you to move directly from one Web site to another. For example, when you look at a particular Web document, you may see text that is in color and underlined. That means it is a **hyperlink**. If you move your mouse cursor to the hyperlink and click the left mouse button, the URL for that site will be called up, and you will be transferred to that Web site in just a few seconds.

World Wide Web documents are commonly referred to as "pages." The home page typically is the main page or starting point for a Web site. Using hyperlinks on the home page, you can move to related pages or to other sites anywhere in the world that are linked to that particular page. We'll look at examples later in this chapter.

Gopher sites were among the earliest client-server tools on the Internet. Originally developed at the University of Minnesota, Gopher servers organize information in more traditional hierarchical structures than the Web. While Web sites allow you to leap to other sites through any link that has been established in a Web page, Gophers tend to organize information categorically. This allows you "burrow" deep into a category and to move logically along a path of related information.

File Transfer Protocol (FTP) is one of the original protocols or procedures for accessing and downloading files on the Internet. Thousands of FTP sites are on the Internet. Some require that you be a registered user, while others allow you to identify yourself as a user with the password "anonymous." FTP is very efficient for downloading large data files. It is less useful for viewing information on screen and does not support multimedia presentations like the Web does.

To some extent, Internet addresses also follow certain conventions. Usually the first item specifies the protocol involved (http, ftp) followed by a colon and two slashes. Web addresses frequently include *www* as the first item after the slashes. Common abbreviations indicate the type or location of a site. For example, *.gov* indicates a government agency; *.edu* is a university or educational institution; *.com* is a commercial site, and *.org* an association or organization. Internet addresses generally use lower case letters. However, some elements of the URL may be case sensitive; so be sure to mind the p's and Q's when copying or typing an address. It must be entered accurately, or it won't take you where you want to go. But with a good address and a Web browser, you can move to any of these types of sites.

Just Browsing

Your ***Web browser*** is your window to the World Wide Web. Once you have an Internet connection, it is the single most important tool you will use. The Web browser is software that allows users to find and view Web documents and information. Many different browsers are available for use on the Internet. If you are connected to the Net through work or school, in all likelihood a browser is already installed. If you have purchased Internet access through a service provider, browser software was probably included in the installation software package. You can also obtain different browsers and configure them for your system, buying the software at a store or even downloading it free from the Internet. While browsers have different features and capabilities, some

fairly generic features are common to most. Let's take a brief look at some of these, using Netscape Navigator 2.0. In Figure 1, the home page of America's Job Bank appears in the display window of the Netscape browser.

Figure 1

Netscape - [America's Job Bank]
File Edit View Go Bookmarks Options Directory Window Help
Back Forward Home Reload Images Open Print Find Stop
Location: http://www.ajb.dni.us/index.html
What's New! What's Cool! Handbook Net Search Net Directory Software
Welcome To America's Job Bank
MAGELLAN 4 STAR SITE
NEW Employer Services, Post Your Job on the Internet! NEW
Document Done
Start HiJaak Capture Connected to DIGEX Netscape - [America'... 3:21 PM

Whenever we access a Web page (or for that matter a Gopher or FTP site), the page is shown in the browser window. Note that a "page" may in fact be several screens long, so the right side of the display window has vertical scroll bars. A horizontal scroll bar is available at the bottom of the display.

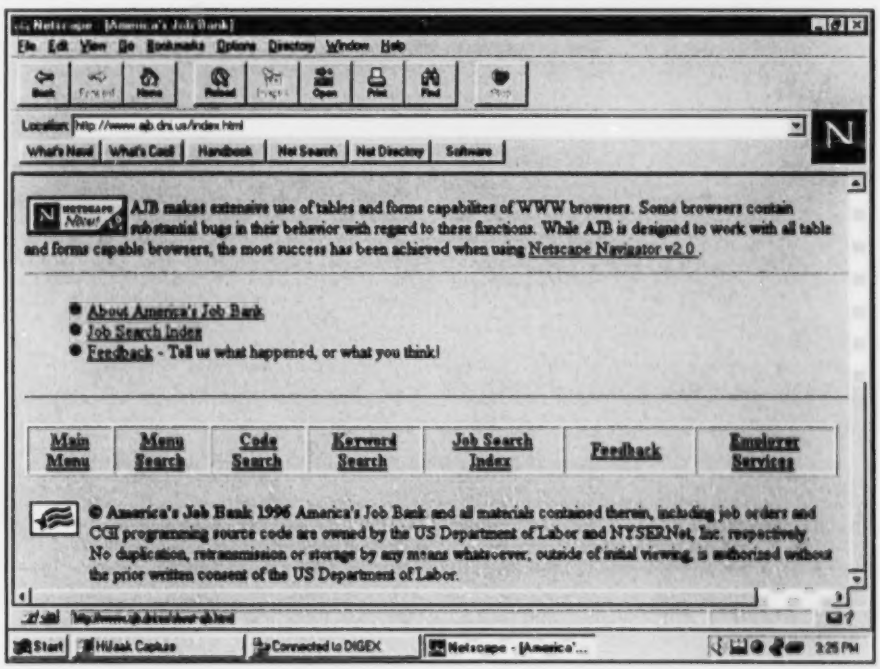
At the top of the browser is the **menu bar** (File, Edit. . . . Options, Directory). This is a typical Windows menu. All options are found in the pull down menus available from the menu bar. One option that all browsers provide is a convenient way to save URLs in an address list so that you do not need to retype a long address once you have visited the site. In Netscape Navigator, this list is the *Bookmarks* option on the menu bar.

Mosaic, another popular browser has the same feature, but calls it a *Hot List*. Other browsers may use different names. *Whenever you find a new site that interests you, save the URL by using this feature.* You will need to follow the specific instructions for your browser.

Below the menu bar is the **toolbar**, which also is quite typical of Windows-based systems. The toolbar consists of buttons that you choose by clicking on them with the mouse. Two buttons that you will use over and over again are the *Back* and *Forward* buttons. They allow you to move back (or forward) to sites that you have accessed previously during a Net session. The *Home* button allows you to move to the home page that appears when you first log on to the Net.

Just below the toolbar you will see the *Location* window, in which the URL for the current site is displayed. In Figures 1 and 2, it is the URL for America's Job Bank. You can move to any Net site by clicking on the URL window and typing in a new URL. Typically there are other ways you can enter a new URL in your browser. For example in Netscape, if you click on the *Open* button on the toolbar, a window will appear with space for typing in a URL. The important point is that all browsers allow you to type in the URL for any Web site, and most browsers allow you to type in FTP and Gopher URLs as well.

Figure 2


File Edit View Go Bookmarks Options Directory Window Help
Location: http://www.ajb.dni.us/index.html
What's New! What's Cool! Handbook Net Search Net Directory Software
AJB makes extensive use of tables and forms capabilities of WWW browsers. Some browsers contain substantial bugs in their behavior with regard to these functions. While AJB is designed to work with all table and forms capable browsers, the most success has been achieved when using Netscape Navigator v2.0.
About America's Job Bank
Job Search Index
Feedback - Tell us what happened, or what you think!
Main Menu
Menu Search
Code Search
Keyword Search
Job Search Index
Feedback
Employer Services
© America's Job Bank 1996 America's Job Bank and all materials contained therein, including job orders and CGI programming source code are owned by the US Department of Labor and NYSERNet, Inc. respectively. No duplication, retransmission or storage by any means whatsoever, outside of initial viewing, is authorized without the prior written consent of the US Department of Labor.
Start
Connected to DIGEX
Netscape - [America's...
3:25 PM

Earlier we introduced the concept of hyperlinks, which allow you to move from one Web site to another. Using our AJB example, let's look at how these work. Scrolling further down the AJB page, we find both text and graphic hyperlinks (Figure 2). Text hyperlinks are easily identified because they are underlined and, on a nice color monitor instead of this black and white page, the text appears in a different color. In Figure 2, the graphic hyperlinks are rectangular "hot buttons" with underlined titles. In Figure 3, you also see underlined text and a graphic icon that are hyperlinks.

Figure 3

Welcome to New Mexico's Job Bank!
New Mexico's Job Bank - Job Search
Search for work in New Mexico
Links to other State Job Banks
Search Nationally with America's Job Bank
Choosing this icon will always return you here.

When you move your mouse pointer over a hyperlink, the pointer changes shape; for example, in Windows applications it often changes to a hand. This lets you know you are on an active link. If you click the left button of your mouse, you will move to the site referenced by that link. While a site is being contacted, the mouse pointer changes shape again; frequently, it becomes an hourglass. If we click on AJB's **Job Search Index** (see Figure 2), we move to another page at the AJB Web site. The new page (not shown) allows us to choose among several job search options, including **Links to State Employment Service Web Sites**. When we click on this, a list of states appears in our browser display window. If we click on one, for example **New Mexico**, we move to a completely different Web site, the home page of New Mexico's Job Bank (shown in Figure 3).

In this simple example, we have moved from one site to another and yet another by using the hyperlinks. If we find an interesting page along the trail, we can save its URL for a future visit. We can use the *Back* button on the toolbar to retrace our steps to the AJB home page, or we can jump back directly, using a hyperlink. As you can see in Figure 3, the New Mexico home page helps you return to AJB through the hyperlink, **Search Nationally with America's Job Bank**. Many Web sites offer this convenient feature.

One thing to keep in mind when you are online. You're not the only user seeking access to a site. Don't be surprised if a site is busy, and you get a message suggesting you try again later. If it is taking a long time to access a site, click on the *Stop* button on your toolbar (most browsers have this feature), and try again later. If you still can't reach a site, double check the address and try it some other time. As the number of users on the Internet expands, traffic jams at some sites are an unhappy fact of life. At least on the Net, you don't have to wait until the traffic abates. Just pull down your hot list and pick another interesting site to visit.

With hyperlinks, it's possible to move far beyond your intended destination and to find many more resources related to the subject you're pursuing. That's one way we found the Web sites featured in this paper. But you can also search for Web sites without relying on hyperlinks. In the next section, we briefly explore some ways to do this.

Spinning Along: Search and Research

How do we find other Internet sites? Of course, many will come from recommendations of colleagues, friends, or magazine and newspaper articles. But how do we search the Web in a more comprehensive or organized fashion? As noted in *PC Magazine*,[1] *"You can't dial 411 and ask for someone's home page. The Web has no official, consolidated directory of sites, nor will it have one anytime soon."*

While there is no single index of the Web, a number of excellent resources are available for searching the Internet. Some are catalogs of sites, clearinghouses, or directories of specific topic areas. Some are ***search engines*** that allow you to specify your search criteria. In this section, we introduce a small set of these to help you get started. Over time you will build your own list of favorite search tools. All of these resources are Web sites themselves, so to access them you only need to know their URL.

For wider ranging and more flexible searches, you will want to use several of the many search engines that are available on the Internet. For an excellent introduction to search engines, we recommend the article, "Find it on the Net," in *PC World,* January 1996.[2] Search engines are Web sites that allow you to find available URLs on any subject, including career and job resources. You enter the key words and search criteria, and the

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[1] Cade Metz. "The Top 100." *PC Magazine*. February 6, 1996. p. 112. *PC Magazine* has a Web site that lists its top 100 sites at: **http://www.zdnet.com/pcmag/special/web100/top100f.htm**

[2] "Find it on the Net." *PC World*. January 1996. pp. 125-130. This introduction to search engines on the Internet provides URLs of many search tools and classifies them by type. We recommend the article, but don't limit yourself to the search engines it discusses; many more are available.

engine searches the Web. These engines search in different ways, and the number of "hits" you get will vary from one to another. There are even multiple search engines, like MetaCrawler (listed below), that employ several different engines in a single search.

Some Web sites, like Yahoo, have search trees that allow you to select a broad topic, like "government," which then branches to more detailed topics, e.g. "Federal Agencies," "Legislation," "State Governments," etc., until you reach a listing of specific Web sites. Such search trees or "funnels" can be very helpful in a search when you have a general category that you would like to explore.

If you want to try a variety of search engines and a directory or search tree at the same time, take a look at the Internet Sleuth. It provides more than 1,000 searchable databases and links to several other search engines. It is located at: **http://www.intbc.com/sleuth.**

Even though a given search engine may claim it covers nearly all Net sites, the way in which it searches the Net plays a role in how many documents it finds. Another search engine may find different pages that meet your criteria. Over time you will probably select a few that work best for you. Keep in mind that new search engines pop up on the Web, and current ones seem to improve continually. The Internet home page coverage of these systems varies. Some search programs (Yahoo) allow sites to register, while others are automatically updated by computer-based inventories of all Web sites. (Lycos, for example, claims it contains more than 19,000,000 documents, covering more than 91 percent of the Web, as of February 1996). The searches generally have the following features:

- **Key word search** — Users may specify one or more words to search on. The search engine provides a list of documents that contain the key word in their titles or abstracts, listed in order by degree of match.

- **Type of match** — Users may request matching for all words used, may specify 'and/or' word search, or may specify the type of match, ranging from loose to exact.

- **Number of documents to list** — Users may request 10, 20, 50 or 100 items per list and may also specify the type of document listed (title, brief abstract, full abstract).

Some search engines we have used are listed on the following page. They are only examples, and no judgment is made of their quality or comprehensiveness.

Sample Search Engines

Alta Vista	http://www.altavista.digital.com
Lycos	http://www.lycos.com
Lycos Search Form	http://www.lycos.com/lycos-form.html
MetaCrawler	http://metacrawler.cs.washington.edu:8080
WebCrawler	http://www.webcrawler.com
Yahoo	http://www.yahoo.com

Usually search engines or tools provide introductory or explanatory files to help new users understand how to enter search criteria. Always look for these aids to make searches more efficient.

Capturing the Gold

You can capture the treasures you find on the Web and save them on your own computer. If you find a text file that you want to keep, you can either print it out or you can save it to a directory on your hard drive. Some Web sites also offer files for downloading. It's worth spending some time to learn how to do this using your particular browser and system.

Many Internet sites alert users to the size of documents or files they have selected. Look for clues to the size of a document before you decide whether to download, save, or print it. And if you're planning to download lots of files, invest in appropriate antivirus software to protect your computer's hard drive.

As Shakespeare once wrote, "The web of our life is of a mingled yarn, good and ill together."[3] So, too, the World Wide Web. It can delight us with its electronic gems — and confound us with its clutter and its quirks. It takes a patient spider "to explore the . . . vast surrounding" but the benefits are many in the bargain.

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[3] Shakespeare, W. *All's Well that Ends Well*, IV, iii, 83.

Chapter 2

Career and Job Information on the Web

Introduction

The Internet is fast becoming an important source of career information and job leads. In its February 1996 issue, *PC Magazine* included 10 career and job sites in its list of "The 100 Top Web Sites."[1] The same month, and again in March, America's Job Bank had more than 4 million "hits" online. Such job and career resources on the World Wide Web offer a wealth of information for counselors, career development specialists, and other professionals concerned with human resource development, education, and training. Most of them will also be of interest to parents, students, and individuals who are looking for a job or exploring educational and career opportunities.

In this chapter, we focus primarily on the Web. We have included resources from both the public and private sector. Some commercial sites include fee-based services, but all of the ones we have listed are worth reviewing to see the kinds of information and services already available on the Internet.

Three types of sites are described in this chapter:

1. Direct sources of job listings and career information;

2. Clearinghouses or directories of Net sites that feature job search and career resources; and

3. Other Web sites of particular interest to professionals working in career development, counseling, or training.

We begin with a selected list of direct sources of job listings and career information. Our choices illustrate the types of sites and features found currently on the Web. The second set of sites, Clearinghouses, provides a good starting point for navigating to other related Net sites. The third group of Web locations includes several sites that counseling professionals and others may wish to explore for additional career development

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[1] Cade Metz. "The Top 100." *PC Magazine*. February 6, 1996. p.112. *PC Magazine* maintains a Web site listing its top 100 sites at:
http://www.zdnet.com/pcmag/special/web100/top100f.htm

resources, updates on legislation, summaries of national initiatives in the U.S. Departments of Labor and Education, and other information.

Direct Sources of Job and Career Information

The World Wide Web has increased the number of jobs listed on the Internet and the ease of gaining access to the listings. Many job placement firms have moved onto the Web to promote their services and attract a larger talent pool of qualified candidates. Although the "headhunter" firms often specialize in professional fields and information technology, the array of job resources on the Internet covers most major occupational and industry groups.

This section features some of the public and commercial Web sites that provide career and/or job search assistance. Most of the sites contain large job databases and allow interested applicants to upload résumés. Some of the sites also have useful job search advice and references to other related Web resources. The sites are listed alphabetically. All are worth reviewing.

America's Job Bank **http://www.ajb.dni.us**

America's Job Bank, operated by the U.S. Department of Labor, is a computerized network that links the 1,800 local offices of state Employment Service programs. It provides job seekers with the largest pool of active job opportunities available anywhere. For employers, it offers rapid, national exposure for job openings. The combined nationwide listings in America's Job Bank contain information on approximately 350,000 jobs. Most of them are full time, and a majority are in the private sector.

The AJB World Wide Web home page (shown on pp. 9-10) contains useful "hot key" links to many state job banks and related employment service, unemployment insurance, and labor market information services. It provides flexible access to job openings through a menu search of occupations and states, a code search, and a keyword search. Through the job search index, users can find hyperlinks to state job banks. They can connect to employer Web sites and to other sources of job search and career assistance.

A number of services are available to employers, including an option to post job openings directly while they are online. There is no fee for employers listing job vacancies or for applicants using the service.

America's Job Bank is one of the most visited sites on the Internet. In one week this spring (March 17-24), its home page had more than one million visits or "hits."

Career Magazine **http://www.careermag.com**

Career Magazine is a comprehensive online career resource with daily job updates, employer profiles, discussion groups, news articles, and classified ads. It combines job postings from Usenet newsgroups into a searchable database. Users can specify preferred job locations, skills, and titles. They obtain lists ranked by best fit (relevance) or most recent job postings.

Career Magazine is described as an "interactive career resource, designed to meet the individual needs of job seekers, human resource managers, and career-minded professionals working in the 'networked' nineties." It also has an employer service called the National Career Search that ". . . provides a low cost staffing resource for employers to find qualified candidates for professional and technical job openings."

Career Mosaic **http://www.careermosaic.com**

In addition to extensive job listings, Career Mosaic features employer profiles, online job fairs, a college connection to help graduates find entry-level employment, and a career resource center. To search its jobs database, users may start with the first field — job description — then gradually define their search through other parameters such as company or location. They can also submit their résumés for posting.

Its career resource center offers tips on job-hunting and résumé writing, as well as links to professional and industry associations and other research tools to help with a job search. It also links to Web sources of help with improving your writing skills and keeping up with developments in your field.

CareerNet **http://www.careers.org**

CareerNet provides a comprehensive site for job information and listings. It offers links to "jobs, employers, business, education and career service professionals on the Web." It also directs users to many categories of career-related Web resources, including newsgroups, colleges, associations, bibliographies, computer software, and libraries. In this respect, it is somewhat like a clearinghouse. It also includes resources for small businesses and self-employment. Several new features are currently under construction, including one called "Career Gems — Best of the WEB."

Career Path **http://www.careerpath.com**

Career Path is a Web employment service featuring job listings from six city newspapers: The Boston Globe, The Chicago Tribune, The Los Angeles Times, The New York Times, San Jose Mercury News, and The Washington Post.

Users can sample its listings without registering. However, registration is free and simple to do. To search, users must specify at least one newspaper and one job category or key word. Listings are updated daily.

ERISS **http://www.eriss.com**

The ERISS home page provides a useful listing of job search software sources and Web sites focusing on job listings, résumés, career resources, and government agencies. ERISS is a private company that develops and markets software products to provide "one-stop access to the world of work." Its home page provides free listings of specialized Web sites, as well as a description of its commercial products.

E-Span's Interactive Employment Network **http://www.espan.com**

E-Span's Interactive Employment Network provides a range of career services including job listings, résumé postings, career fairs, salary guides, and related articles. E-Span reports that, "Each month, tens of thousands of candidates rely on E-Span as their Online Employment Connection." Users simply register once — free — and E-Span's search system automatically e-mails them appropriate job openings.

JOBTRAK **http://www.jobtrak.com**

JOBTRAK is another large job listing service, which has special links with more than 350 college and university career centers nationwide. It focuses on services to employers seeking new or recent college graduates and on students seeking job and career information. Its listings include both full- and part-time jobs, employer profiles, and a career fair calendar. One of its special offerings is the Riley Guide (described in the section on clearinghouses).

Employers can post job listings via an 800-number or online. If they wish, they can target their advertisements to their choice of campuses. Posting fees are nominal for employers, depending on the number of schools chosen. The service is free of charge for colleges, and employer fees are shared with the career centers.

Monster Board **http://199.94.216.71**

- This very large Web job site "offers you instant access to over 48,000 jobs in all fields, as well as the chance to submit your résumé to our database." It also provides online job fairs and employer profiles. Users can scroll through job listings selected by location, discipline, and/or company. Another approach is a keyword search that yields selective lists of job openings. Users may apply for jobs that interest them directly from Monster Board.

Online Career Center **http://www.occ.com**

The Online Career Center (OCC) is a job and résumé resource maintained by a non-profit employer association. Résumés may be submitted at no cost and are posted for 90 days. New features include options for applicants to enter HTML résumés and HTML employer ads. (HTML stands for HyperText Markup Language; Web pages containing text are written in this language.)

OCC's purpose "is to develop, manage and engage in all aspects of electronic distribution of employment advertising and communications for human resource management. OCC provides a database, job, and résumé files, company information and profiles, and online search software to assist both employers and applicants in effectively using Internet."

Job and Career Information Clearinghouses

Clearinghouses are valuable Web resources because they display the many kinds of information and services that are available. They also are likely to provide hyperlinks to other useful related Web sites. Some have job listings as well as more general information. Many have been developed by universities as part of their career support services for students. Four popular and comprehensive clearinghouses are mentioned below.

The Riley Guide: Employment Opportunities and Job Resources on the Internet
http://www.jobtrak.com/jobguide

This award winning site, developed initially at Worcester Polytechnic Institute, is a comprehensive clearinghouse of job and career information on the Internet. It offers guidance with job seeking on the Internet, including how to find job information and post job listings. It also has files on locating international information, career planning

services, and resources for improving a job search. The Riley Guide offers leads to jobs listed on the Internet and employment resources by field, by state, and abroad.

The Catapult, the National Association of Colleges and Employers

http://www.jobweb.org/catapult/catapult.htm

The clearinghouse, developed originally at the College of William and Mary, is a "springboard to career- and job-related sites that career services professionals from around the world have found useful." It contains references to Web career guides and library resources, job postings, professional associations, 17 Web search tools, and college career centers.

Career Resources Homepage, Rensselaer Polytechnic Institute

http://www.rpi.edu/dept/cdc/homepage.html

This Web site contains a meta-index of Internet career resources, including the Internet Job Surfer (various commercial job databases on the Internet), Employer's Direct (job databases and information of more than 100 employers), professional associations, and career services at various colleges and universities, and 13 other Internet job lists.

Job Hunt, Stanford University **http://rescomp.stanford.edu/jobs.html**

The Job Hunt is a meta-list of online job search resources and services. This site presents classified ads of jobs listed in major metropolitan newspapers. Jobs are listed in various areas, among them science, engineering, and medicine. The site also includes job offerings from Net Newsgroup and résumé banks. The listings contain short annotations and note outstanding resources.

Other Sources

Department of Education (ED) **http://www.ed.gov**

This site offers a wealth of resources for parents, counselors, teachers, and researchers. The home page (see p. 29) is designed with these user groups' needs in mind. A section on Money Matters, for example, leads to information on student financial assistance. It also contains detailed information on grants, contracts, and funding opportunities.

By clicking on your state on a U.S. map, you can find out what services and resources are available in your state or region. Major research studies and reports from, for

example, the National Center for Education Statistics can be viewed or downloaded under Publications and Products. (NCES offerings are described in Chapter 3.) Hundreds of educational software packages can be downloaded (free). The ED site has its own information retrieval tools to find documents at its own sites or elsewhere on the Internet. And it describes the kinds of information you'll find.

Hyperlinks take you directly to six categories of other online educational resources. These include lists of Internet-accessible library catalogs and services, general catalogs and subject trees on education, and Web sites of various educational associations and organizations. It also provides links to all of the ERIC Clearinghouses, described below.

ERIC **http://www.aspensys.com/eric2/welcome.html**

The Educational Resources Information Center (ERIC), funded by ED's Office of Educational Research and Information (OERI), is a "nationwide network that acquires, catalogs, summarizes, and provides access to education information from all sources." It produces a variety of publications and offers extensive user assistance.

Two hyperlinks will give you an idea of what it has to offer:

> **ACCESS ERIC** introduces and leads users to the 16 subject-specific Clearinghouses. For example, one can jump to the Clearinghouse on Counseling and Student Services (ERIC/CASS). At CASS, counselors can browse through ERIC digests on assessment, supervision, and other topics. It is also possible to read descriptions of new publications and order copies from the catalog.
>
> **AskERIC** is an Internet-based service that answers questions from teachers, librarians, counselors, administrators, students, parents, and others. It allows users to search the ERIC database using a simple query form. It also includes a "hot-list" of other Internet sites that AskERIC's information specialists have found helpful.

Department of Labor (DOL) **http://www.dol.gov**

The Labor Department's home page provides access to information from the Employment and Training Administration (ETA), the Bureau of Labor Statistics (BLS), the Occupational Safety and Health Administration (OSHA), and other Department of Labor programs and initiatives. The BLS Web site is described in chapter 3 of this paper.

DOL/ETA **http://www.doleta.gov**

The DOL/ETA home page provides access to the Department of Labor's Employment and Training Administration and key ETA programs, such as the Unemployment Insurance Technology Support Center, America's Labor Market Information System (ALMIS), O*NET (the replacement for the Dictionary of Occupational Titles), and School-to-Work programs.

O*NET **http://www.doleta.gov/programs/onet**

ETA's Occupational Information Network (O*NET) is intended to be the new, automated replacement for the Dictionary of Occupational Titles. When it is completed, it will provide a comprehensive database that identifies and describes important information about occupations, worker skills, and training requirements. DOL plans that O*NET will have value to counselors and other intermediaries in the One-Stop Career Centers, Employment Service offices, the National Skills Standards Board, and the nation's workers and employers. The O*NET is expected to become a national benchmark for providing a common language for all users of occupational information.

Training Technology Resource Center **http://www.ttrc.doleta.gov**

This ETA resource provides a wealth of information on Federal and state training activities. Four areas are featured.

One focuses on ETA-related legislation. It offers summaries and the full text of key Federal legislation, including JTPA and School to Work.

The Directives area of TTRC features field memoranda from DOL, ETA, and the U.S. Employment Service. Users may search by agency and year and browse the subjects of each directive. TTRC will be adding the full text of all One-Stop and ALMIS newsletters.

TTRC also provides extensive contact information. Users may search from 35 different program areas and obtain contact information on state agencies and ETA projects. Lists include state employment security agencies (SESAs), labor market information (LMI) directors, SOICC and career information delivery system (CIDS) directors, and School-to-Work project directors. The contact information may be searched by state or region.

The Skills Standards and Certification area of TTRC provides information on the National Skills Standards Board, including meeting schedule, reports, and brief descriptions of Board members.

SKILLSNET **http://steps.atsi.edu/index.html**

SKILLSNET is a focal point for occupational and industrial skills activities, research, and resources. It includes information on the National Skills Standards Board. NSSB documents are available for downloading. Information on industry and occupational skill projects is also available. SKILLSNET includes useful links to vo-tech curriculum resources, such as DACUM, the National Center for Research in Vocational Education, and ERIC, as well as selected international resources. Future connections are planned for state skills board information and research firms in the skills area.

The SKILLSNET home page is maintained by the American Training Standards Institute, a non-profit group formed to support and enhance the emerging national skills infrastructure. ATSI's mission is "to enhance the economic competitiveness of our nation and to provide a collaborative atmosphere among its members that will produce scalable skills measurement and assessment tools, skills-based training courses and certification, life long skills acquisition plans for all Americans, and technology-based solutions to assure equal access to training offerings."

Chronicle of Higher Education **http://chronicle.merit.edu**

The online edition of the *Chronicle of Higher Education* allows users to check for job openings in and outside of academe. It also contains sections on facts and figures on U.S. higher education, notable Internet resources for academics, developments in information technology, and other news in higher education.

CollegeView **http://www.collegeview.com**

Maintained by Hobsons Publishing Company, the CollegeView Web Edition provides a wide range of basic facts on two- and four-year colleges and information on financial aid. Students, parents, and others can search its database of 3,300 institutions and view multimedia presentations for a number of campuses. Users can search on several different criteria, among them fields of study, state, and size. They can also search by the university's name. The Web View presentations are hyperlinked to the college's home page and offer an e-mail connection to the admissions office.

Peterson's Education Center **http://www.petersons.com**

Elementary and secondary schools, colleges and universities, graduate study, studying abroad, and financial aid are among the topics addressed at Peterson's Education Center on the World Wide Web. A career and job section is under construction, as are sections

on distance learning, continuing education, testing and assessment, and vocational-technical schools. Several search options are offered, including alphabetic and geographic paths and a keyword search of program descriptions. Some schools and programs offer instant inquiries or a URL toggle to a departmental or university home page. Peterson's publications are listed in an online catalogue and may be ordered from its bookstore.

Source EDP Computer Salary Survey http://www.espan.com/salary/salary.html

This site offers prevailing wage survey data for occupations in the computer hardware and software areas. The data may be particularly interesting to career information developers, educational planners, and others.

As We Go to Press

The diversity and amount of job and career information on the World Wide Web changes rapidly. In the weeks that we were reviewing these sites, many more were created. By the time this paper goes to press, the National Career Development Association will have a home page on the Web, and NOICC's Career Development Training Institute expects to have its virtual library of career development resources online. A growing number of state career information delivery systems (CIDS) operators and developers have Web sites. The NOICC home page will have hyperlinks to these and other sites related to career information and career development.

As we hear about useful new sites offering job and career information, we will add their addresses to the appropriate lists on the NOICC home page. The point to keep in mind is that the Internet has much to offer career development specialists, guidance counselors, trainers, and teachers as well as the people they seek to help.

Chapter 3

Labor Market and Education Data Resources on the Internet

Information is the fuel that feeds effective and efficient economic decision-making. The Internet's capacity for making available a wide range of labor market, occupational, and education data has barely been tapped. Yet even now, a significant array of such data is available. The purpose of this chapter is to introduce some of these sources to a wider audience and to encourage greater use of such information. Ultimately this will increase the use of the Net to deliver labor market data, and, perhaps more importantly, foster more analytical presentations to address the wide range of customer needs.

Much of what is currently available are core data sets. The ability to access industry employment data or labor force statistics, for example, and to download them and use them for our own purposes makes the Net a powerful tool. Yet we already see initial forays into the area of labor market analysis – for indeed it is the combination of labor market data and analysis that turns statistics into information. We will highlight some examples of analytical presentations in these Net sites.

This chapter provides a summary of several Internet sites that house labor market and occupational information. Although we focus on a small number of sites, the range of data sets and information they encompass is wide indeed. Thousands of sites on the Net include some types of labor market information. While no two sites are identical, some overlap in coverage occurs across the sites. At the national level, the reason for this is clear. Most key national labor market indicators are developed by a relatively few organizations, such as the Bureau of Labor Statistics (BLS), the Census Bureau, and the Bureau of Economic Analysis (BEA). Many of the data files included in other Net sites come from these sources. Similarly, the National Center for Education Statistics is the principal source for many national education data sets and indicators, which also are often incorporated in other Net sites.

At the state level, most occupational and labor market data are developed by state labor market information (LMI) units (housed in state employment security agencies) and state commerce and education departments. State data are often brought together through state occupational information coordinating committees (SOICCs). By looking at only a few Net sites and categories of sites, we will cover most significant data sets that are currently available.

In this chapter, we take the broadest view of what comprises labor market and occupational information. Our purpose is to let readers know about the range of socioeconomic data available on the Internet and to provide some hints for finding this type of information. The following list is not exhaustive, but it is representative of data currently available on the Internet.

Industry Employment Estimates and Projections
Occupational Data
Labor Force Statistics
Labor Force Participation Rates
Unemployment Rates
Employment Hours and Earnings
Consumer Price Index
Productivity Indices
Output and Production
Demographic and Socioeconomic Data
Population Estimates and Projections
Household Statistics
Income and Poverty Estimates
Health Data
Business Cycle Indicators
Prices
Exports and Imports

This chapter first describes selected national sites and lists their URLs. Next, we introduce state-based resources, particularly LMI unit and SOICC offerings. URLs for states that have established Web pages are available at the NOICC home page. It is maintained by the NOICC Crosswalk and Data Center (NCDC) at:

http://www.profiles.iastate.edu/ided/ncdc/noicc.htm

We encourage you to check it from time to time for newly identified sources and updated URLs. We also suggest you do periodic searches for new sites on your own. As noted earlier, we have selected sites that are the original sources for much of the data (such as BLS, Census, Education), as well as sites with a wide range of data and/or interesting features such as graphic displays.

National Sources of Information

U.S. Bureau of Labor Statistics (BLS)

World Wide Web:	**http://www.bls.gov**
Gopher:	**gopher://stats.bls.gov**
FTP:	**ftp://stats.bls.gov**

The BLS site is a prime connection for nationwide labor market information. While much of the information is national in nature, a signficant number of data sets are at the state and area level as well. The Bureau of Labor Statistics (BLS) has extensive Internet offerings available through the World Wide Web, Gopher, and FTP. The Web site is the most user friendly of the three. However, for quick access and downloading, you may want to try the Gopher and FTP sites.

The BLS site contains hundreds of data sets that you may browse or download, more than we can list in this brief review. Among the types of data series available are: local area unemployment statistics; industry employment estimates and projections; a variety of productivity indices; state and area employment, hours, and earnings; work stoppage data; geographic profiles; and international labor statistics.

The Web site provides flexible and multiple ways of accessing the data, typically using a "forms" based approach that allows the user to select the data series, years desired, and output format. We suggest that you begin by selecting the **Data** option available on the BLS Home Page and then selecting the **Most Requested Series** option on the subsequent BLS Data Page - this is one of the easiest (and most powerful) options to get "your feet wet." The BLS site allows you to select options by clicking on a graphic menu or a text menu. This is particularly useful if you have the autoload graphics feature of your browser turned off. This site also offers graphic displays under the **Economy at a Glance** option (sample on the left).

Generally FTP and Gopher sites are not especially user friendly, at least in comparison to Web sites, but the BLS sites do a particularly good job of providing online documentation describing the file contents and downloading options. The Gopher site opens with a menu for the LABSTAT site. We suggest the first time you try this site that you click on **Labstat Overview Document** and read it carefully. It provides a good description of the data sets available through the Gopher site. Similarly, if you access the FTP site, we suggest that you first read the overview documentation. To do so, select **pub** in the opening menu, then click on **doc**, and then select **overview.doc**. You may also find it useful to review the **README** document in the **doc.** directory.

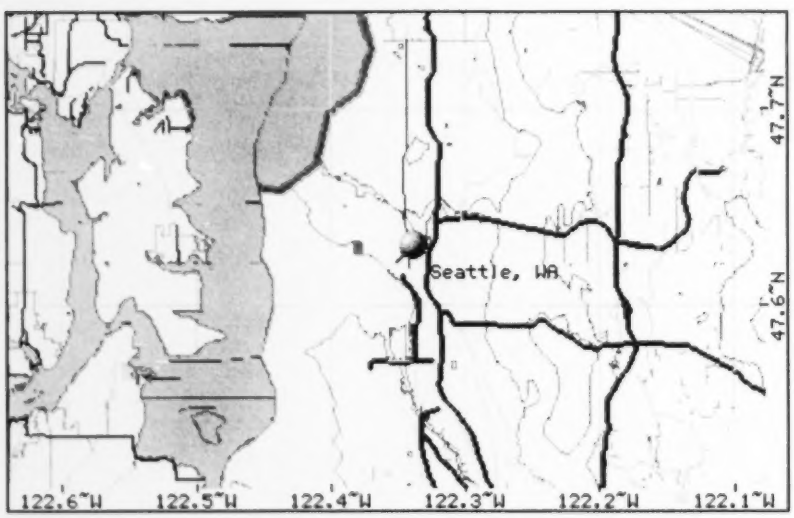
U.S. Census Bureau

World Wide Web: **http://www.census.gov**

FTP: **ftp://ftp.census.gov**

If you're looking for statistics from the decennial census, the current population survey, or any other census or data program operated through the Bureau of the Census, you'll probably find them at this site. While this may be a slight overstatement, it is close enough to the truth to give you a sense of the vast holdings that are available. The **Population and Housing** section is a good place to start. It offers direct access to an immense range of demographic and social information, including population estimates and projections, migration, journey to work, and educational attainment.

The **Economy** set of Web pages is also well worth the visit. It provides such items as data from the economic census, *County Business Patterns* online, financial statistics, business ownership data, and enterprise statistics. But you will find much more than data sets; this site has many exciting features. It includes interactive Tiger Maps (excellent map interfaces that allow you to select areas of interest), a Population Clock that keeps you up to date on U.S. and world population growth, and online resources such as the *Statistical Abstract of the U.S.*



For example, you can enter the name of a city and state (e.g. Seattle, WA), or even the latitude and longitude, and you will get a map similar to the one to the right. These maps are from the Census Bureau's Tiger Mapping system, which is a GIS system. You also can access relevant data files for the area selected. Another particularly powerful and useful feature is the ability to build your own report by selecting multiple data sets and combining them into a single report that you can view in your browser and/or download.

National Center for Education Statistics (NCES)

World Wide Web: **http://www.ed.gov/pubs/stats.html**

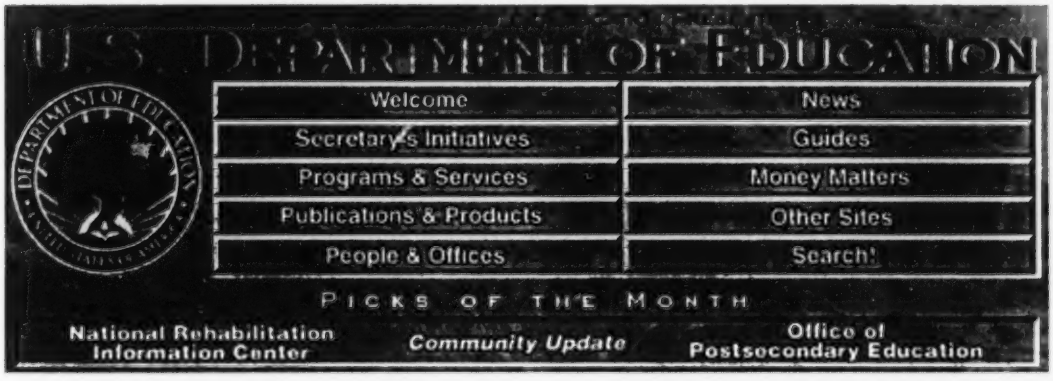
Gopher: **gopher://gopher.ed.gov:10000**

Related Pages:

Education Home Page: **http://www.ed.gov**

Education Gopher: **gopher://gopher.ed.gov/11/**

The National Center for Education Statistics (NCES) Web pages, and the parent Department of Education site, provide not only a wealth of data sets but also numerous reports, guides, and research studies as well. You can reach the NCES home page with the direct URL above or by going through the Education home page. Reports such as *The Condition of Education, The Digest of Education Statistics, Projections of Education Statistics*, and *Youth Indicators* are contained in their entirety at this site. In addition, you can select and download graphics. Generally you can view and/or download chapters that you select or download an entire publication in compressed format (zip files, which can be exploded on your computer using Pkzip).



You can also download many data sets from, for example, the Integrated Postsecondary Education Data System (IPEDS) and National Postsecondary Student Aid Study. Data can be accessed through the Web site or the Gopher site, though the former is more user friendly. In many cases, you can move through the Web site to identify and select the desired information, which the Gopher will then provide. As a side bar, the Education site offers hundreds of education software files that can be downloaded. It is worth reviewing through the Education Gopher URL: gopher://gopher.ed.gov/11/ from which you can select the **Educational Software** option.

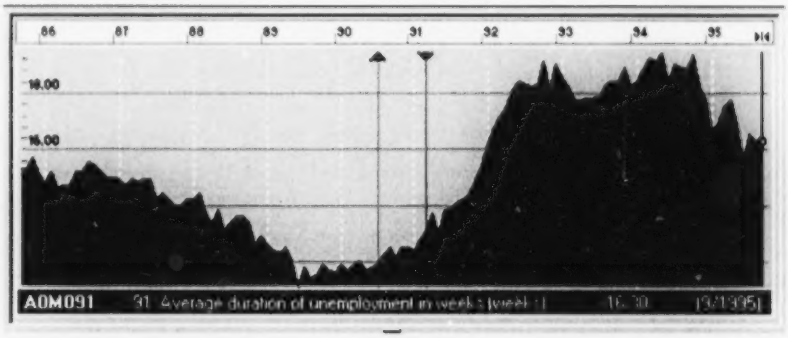
BEST COPY AVAILABLE

Media Logic: The Economics/Markets/Investments Index
http://www.mlinet.com/mle/econdata.htm

This site is operated by a private company, Media Logic Enterprises, but access to the data in this site is free. It is particularly interesting because it provides online charts for the various time series, spreadsheets that can be downloaded, and a searchable index of data, news/articles, and services.

We suggest that you first explore **Media Logic's Business Cycle Indicators**. It provides simple access to the time series available. Its 256 data series are grouped into 16 categories that make up the US Business Cycle Indicators (BCI) published by the U.S. Bureau of Economic Analysis. Examples of the types of time series available include: labor force, employment, and unemployment; sales, orders, and deliveries; prices; wages, labor costs, and productivity; and exports and imports.

The time series are typically monthly or quarterly and generally go back to 1948. Graphic charts (such as the one at right) are available for each of the BCI series. They are particularly useful for analytical purposes. In addition, each time series can easily be downloaded as a spreadsheet in .wks format through a simple download option that follows each chart.



Media Logic's site provides a nice search option, **Search Economics Topics**, that allows you to search on different economic topics, indicators, and data types. We recommend that you try using this option to get acquainted with the kinds of information Media Logic has to offer.

Bureau of Economic Analysis

BEA: **http://www.bea.doc.gov**
STAT-USA: **http://www.stat-usa.gov**

The Bureau of Economic Analysis of the U.S. Department of Commerce is a major producer and compiler of economic, business cycle, and labor market data. BEA has built a large online source for business and economic information developed by more than 50 federal agencies. BEA bills the site as a "one-stop" shop for such data in its

STAT-USA Web site. This is a fee-based site. As we noted, this occasional paper focuses on sites that are free, but the STAT-USA offering is so comprehensive that it must be included here. The STAT-USA page notes that it "brings over 300,000 reports and statistical series (the equivalent of seven sets of encyclopedias) right to your desk top, including press releases, trade leads, and reports that are released on a daily or weekly basis."

You can take a "test-drive" on STAT-USA to decide whether you want to subscribe to this service. To access STAT-USA, use its URL (listed above) or use the BEA URL and then select the **BEA Data** option. We suggest that you access the STAT-USA site and take the test drive, which is free. While it includes only a limited set of sample databases, it does give you the opportunity to test some of the search capabilities available at the site. Needless to say, subscription information is available directly from this Web site.

Federal Reserve Banks

Several Federal Reserve Banks maintain Web sites (addresses listed below) that include a variety of information at the national or reserve bank district level. We highlight two sites, Minneapolis (Woodrow) and St. Louis (FRED), which specialize in various types of business, financial, and labor market information. Most labor force, employment, business cycle indicators, and population data available at these sites are developed by and available through the BLS, Census, and BEA sites. However, a number of other financial/fiscal data sets that may be of interest are included in the Reserve Bank sites. Also, some of the labor market information files are nicely arranged for downloading at the FRED (St. Louis) site in .exe. and .zip formats.

Federal Reserve System Internet Sites

Atlanta:	http://www.frbatlanta.org
Chicago:	http://www.frbchi.org
Cleveland:	http://www.clev.frb.org
Dallas:	http://www.dallasfed.org
Minneapolis:	http://woodrow.mpls.frb.fed.us
New York:	http://www.ny.frb.org
Philadelphia:	http://www.libertynet.org/~fedresrv/fedpage.html
St. Louis:	http://www.stls.frb.org

Woodrow: Federal Reserve Bank of Minneapolis Information Service
http://woodrow.mpls.frb.fed.us

The Federal Reserve Bank of Minneapolis Information Service Home Page (named Woodrow in honor of President Woodrow Wilson) includes a wide range of economic and labor market information both at the national level and for the states in the Federal Reserve Ninth District. You may wish to explore the range of items available on its home page (address listed above).

For labor market and economic data, try **Tracking the Economy** on the home page and then select **National Economic Data** under *US Indicators* from the *Tracking the Economy* page. From there you might want to begin with **General Data** and explore some of the data sets available through the Web page. Most of the files are provided in an ASCII format, though some,such as Industrial Production,are also available as spread sheets (wk1). A wealth of data is available from *Woodrow* under the following categories: General Data (includes GDP, Final Sales, Industrial Production Index and Employment Data); Consumers; Housing; Business (includes Investment and Inventory Data); Foreign; Government; Prices and Wages; and Financial/Money Supply Data.

FRED: Federal Reserve Bank of St. Louis
FRED URL: http://www.stls.frb.org/fred
St. Louis FRB: http://www.stls.frb.org

You can access the FRED page directly using the first URL above, or access the St. Louis Federal Reserve Bank page through the second URL and then select the **FRED** hyperlink, or explore other options. The FRED database provides U.S. financial and economic data on business indicators, employment and population, interest rates, exchange rates, price indices, and other related information. FRED also provides regional data for the states in the St. Louis Federal Reserve District. You can view data for the last 12 months for the various series. This is useful for viewing on screen or for maintaining small databases of the most recent observations. (It is usually the first hyperlink at the top of a page when you access a data set category.)

The full series are also available and, depending on the data set, may go back as far as 1948. Files are available in ASCII format (uncompressed) or in compressed formats, either .zip or self extracting .exe formats. If you plan to download individual files, you will need to download the ASCII version. If you want all of the files in a particular category, you can download them in a single file, selecting either the .zip or .exe option. The first time you access the FRED home page, we suggest you try the **Data Sets** hyperlink and then explore different data sets.

Other Sources

University of Michigan Gopher Site **gopher://una.hh.lib.umich.edu/11/ebb**

The following description is taken directly from the documentation for this Gopher site. "The University of Michigan Library now provides access to [the] US Commerce Department's Economic Bulletin Board, a set of over 700 data files covering 19 areas related to the US economy. These data are updated daily, and include such information as economic indicators (e.g., Gross Domestic Product, Consumer Price Index), fiscal and monetary data (e.g., Treasury bill rates), and interest and foreign exchange rates. The files in the University of Michigan's Dept. of Commerce Economic Data area have been downloaded by University Library staff from the U.S. Department of Commerce's Economic Bulletin Board. The various file areas contain current economic and trade information, such as economic indicators, U.S. treasury auction results, and employment statistics. Some of the larger files are available in a compressed, MS-DOS specific format." The University of Michigan emphasizes that it is not a government site or directly affiliated with the U.S. Department of Commerce.

This Gopher site is an immense repository of data and well worth exploring. Many files are available in uncompressed format and can be downloaded or viewed in your browser. Other files are available in self-extracting .exe files and should be downloaded and then "exploded" off-line on your own hard drive. Some series are available as spreadsheets. The format of each file is clearly indicated to assist in downloading the files. Again, as with most Gopher sites, look for any "read-me" or documentation files to identify what files are available, downloading options, and file structures and documentation.

NOICC Crosswalk and Data Center **http://www.profiles.iastate.edu/ided/ncdc**

The NOICC Crosswalk and Data Center (NCDC) is a technical resource on occupational and education and training classification systems. The Center specializes in links and relations among the various classification systems. In addition NCDC maintains selected data files from the national occupational employment statistics program and from the census. While the files are not directly available through the Web at this time, you can view sample files available at NCDC by clicking on the link **sample database** on the home page. A catalog of files that can be ordered from NCDC along with ordering information to order files through the mail or to download files through the NCDC electronic bulletin board are available at this site.

Resources for Economists on the Internet

http://econwpa.wustl.edu/EconFAQ/EconFAQ.html

This site does not provide labor market information directly, but rather offers a detailed resource list that includes hyperlinks to many sites that are of interest to economists, researchers, and others interested in economics. Many of these sites are sources of labor market and occupational information. The list includes links to U.S. data, world-wide economic data, economic journals, economic associations, universities, economics-related computer programs on the Internet, and many other topics. This is a worthwhile site to explore to identify other Internet sites that may be of interest. The **U.S. Macro and Regional Data** and **Other U.S. Data** are good starting points on a first visit to this page.

ALMIS **http://ecuvax.cis.ecu.edu/~lmi/lmi.html**

The Labor Department's Employment and Training Administration sponsors America's Labor Market Information System (ALMIS). The ALMIS home page is maintained by the South Carolina SESA and East Carolina University as a part of the ALMIS Training Institute. This Web site is a destination for labor market analysts and consumers. It presents information about ALMIS projects; calendars of upcoming events; state-maintained bulletin boards, products and services; labor market information (LMI) contacts; and news releases of interest to the LMI community.

State Sources of Labor Market and Occupational Information

For job seekers and counselors, state job banks are key sites to explore for job opportunities. A quick way to find these sites is through America's Job Bank, described earlier in this paper. Its Web site has hyperlinks to nearly all state job banks. This makes it possible to move from one to another and to find new ones that have joined the Web. Typically the state job banks contain information on positions listed with the Employment Service.

In addition to job search information, state Web sites contain a wealth of labor market information. Many state LMI units and SOICCs maintain Web sites. The number of sites and amount of information included is growing by the month. Types of information offered in these sites varies significantly. In some cases, the LMI or SOICC site provides actual data that can be accessed via the Internet. Others may highlight their products and services, as well as instructions for ordering specific products. Because each site is different, and most are significantly expanding their Web offerings, we cannot offer a

definitive list of the kinds of information available at each site. However, the following list indicates some of the types of information that you may find.

- occupational employment estimates and projections
- industry employment estimates and trends
- labor force participation rates
- unemployment estimates and rates
- industry wage and salary data
- population data
- occupational licensing information

The sites listed below offer some good examples of the diversity and breadth of information currently available from state LMI and SOICC Web sites. Many of these sites are still under construction, but within the next year they and others like them are likely to offer more information online.

Louisiana Department of Labor **http://www.ldol.state.la.us**

This site not only offers statistics on the Louisiana economy but also is a gateway to the Internet for job search and career exploration. Labor market statistics available at this site include, among others, unemployment rates, insured unemployment data, population data, income data, and the consumer price index. A particularly nice feature is the careers center option, with its access to job openings, national career and job search sites, vocational education Internet sites, and other information on education.

New Hampshire SOICC **http://www.state.nh.us/soiccnh/soicchp.htm**

Many states publish directories of licensed and regulated occupations. The New Hampshire SOICC, among others, has converted its directory of licensing requirements to electronic format for posting on the Web. Select the **licensing** link on the SOICC home page, and you get a hot list of all licensed occupations in New Hampshire. When you click on an item in the list, you get a description of the occupation, type of regulation, continuing education requirements, examination requirements, reciprocity with other states, and the address and phone number of the regulatory agency. It's a good example of how information in print can also be made available to online audiences.

North Carolina LMI **http://www.esc.state.nc.us/lmi/index.html**

This site provides a wide range of LMI for North Carolina, as well as some nice maps showing county unemployment rates and labor force distribution. These illustrate the use

of graphics to present data on the Web. Like New Hampshire, North Carolina's Web site features an online directory of licensed occupations. The site also includes an excellent catalog of labor market studies and products available in North Carolina. It demonstrates how the Web can be used to make more people aware of existing LMI products and services.

Texas SOICC **http://www.capnet.state.tx.us/soicc**

The Texas site illustrates how the World Wide Web can be used to carry out a study, in this case on *Emerging and Evolving Occupations*, and to convey information to users while the study is in progress. Select the **Emerging Occupations** hyperlink on the Texas home page first; then choose **Compiled Nominations for Emerging and Evolving Occupations**. Click on any of the **Tables** on the next page. You can then review the occupations nominated by different groups for this study and various comments about the entries. This offers a great opportunity to get "live" information through an innovative use of the Web.

Vermont LMI **http://www.cit.state.vt.us/det/detlmi**

The Vermont Labor Market Information home page is a good example of a state LMI Web site that contains a wide range of data at the state level and for selected substate areas. Data on employment and wages, unemployment statistics, current employment statistics, occupational wage and employment statistics, and useful planning information are included.

Vermont SOICC **http://www.cit.state.vt.us/det/detlmi/detvoicc/voicchp.htm**

The Vermont SOICC, which can also be accessed from the Vermont LMI site, is a good example of a SOICC page integrated with an LMI Web site. It provides easily accessible data on the fastest growing industries and occupations in Vermont. Of particular note is the newly expanded Training Directory (STI), which groups schools in New England and other northeastern states by educational program category. Search options allow a user to scan an alphabetical list of programs (with CIP codes). The number of graduates from Vermont institutions is shown for applicable programs. Users can select an educational program and see the range of institutions, from vocational-technical schools to universities, that offer it. The file also shows telephone numbers for the schools.

Washington LMI **http://www.wa.gov/esd/lmea**

This site presents a wide range of data and useful narrative labor market analysis, summaries of monthly employment activities, and information on local job training programs. The site features a map interface that allows you to click on a county on a map and receive labor market information for that area. The site's downloading options make it easier to download files from the Net.

Under Construction

By the time this paper is published, the sites used as examples may have changed, and others will have been added. Hot lists (hyperlinks) of all LMI home pages are available at the ALMIS Web site (described above) and at TTRC (described in chapter 2). The NOICC home page also includes hyperlinks to LMI and SOICC Web pages. For up-to-date information and addresses, add this URL to your own hot list of labor market information sites:

http://www.profiles.iastate.edu/ided/ncdc/noicc.htm

Conclusion: Consider This Precious Resource

A noiseless patient spider,
I mark'd where on a little promontory it stood isolated,
Mark'd how to explore the vacant vast surrounding,
It launch'd forth filament, filament, filament, out of itself,
Ever unreeling them, ever tirelessly speeding them.[1]

— Walt Whitman

Early spinners of the World Wide Web were patient spiders, launching forth filament after filament to explore the vastness of cyberspace. Thanks to those pioneers, today's online explorers can point, click, and leap from one Web page to another in pursuit of a subject or a whim. We try searching with Yahoo, Lycos, the Internet Sleuth — redefining and refining our string of key words to find a better match. Something interesting catches our eye. Point, click, and we're off, from perusing an electronic database of colleges and universities to exploring state home pages, campus libraries, cool student sites, a tutorial on writing, an index of poetry — where we spy Walt's "Spider."

Another day the traffic jams at popular job search sites remind us of how dynamic the labor market can be, as job seekers jump from listing to listing in search of likely prospects. Elsewhere, we wait impatiently for the hourglass to become a pointer, for a massive graphic or database to materialize before our eyes. Sometimes we get scolded and thwarted by error messages. Occasionally, we're bounced right off the Net by a quirk or failed connection. We pick up our cybertools and dial again.

Bit by bit, and byte by byte, we burrow for Gopher Jewels and add them to our hot list. Along the way, we pick up a free graphic, courtesy of a grateful surfer inspired to give something back to the Internet community. We sort through the clutter, "back key" away from dead ends. Our personal web of useful sites grows with each foray onto the Internet. And we, too, must think about what we have to offer other Web surfers.

Even if we don't post our own home page, we are involved in shaping and changing the Web. The places we seek out and the search tools we use are affected by how and how much they are used. Many Web site designers invite comments and suggestions. Others analyze usage patterns and improve their offerings accordingly. We can share our ideas for improving existing resources, or we can build new ones. The Web is still very much

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[1] Whitman, W. 1881. *Leaves of grass.* Reprinted in Signet Classics (1954), pp. 347-8. New York: The New American Library.

a work in progress. We have an opportunity and a responsibility to contribute something useful to the online community.

Those of us who work in employment services, career development, education, or training can participate in building these areas of the Web. It is an exciting tool for improving and expanding public access to integrated job, career, and labor market information. We can help consumers understand the data, with analytical presentations or online tutorials using maps, charts, photographs, text, videos, or sound. We can also help them understand how to evaluate and use information in making decisions about employment and educational opportunities.

In our eagerness to be on the Web, we need to remember two long-standing tenets of the NOICC/SOICC Network. First, that the information we present be both useful and understandable. Fancy graphics and colorful charts, in print or online, may catch the public's eye. But if the information is incomprehensible, the consumer is ill served. Our Network has worked hard and long at helping users understand occupational and career information and its applications. We must continue to do so in cyberspace. The Internet is a precious resource; whatever we contribute should enhance its offerings.

Second, that we consider the needs of data users in determining how to present and deliver the information. We have always been a customer-oriented Network, striving to develop delivery systems, products, and training tailored to our diverse constituencies. Many of them are not connected to the Internet. Even if they are, people are likely to want information presented in a choice of formats, from newspapers to CD ROM, depending on where and how they want to use it. Offering our resources on the Net does not mean abandoning other media that serve our customers well. But if we use this promising new resource effectively, we can reach millions of Americans who are seeking information on education, careers, and the labor market.

Internet Sites and Addresses

CAREER AND JOB INFORMATION SOURCES	
Direct Sources of Job Information	**Uniform Resource Locator (URL)**
America's Job Bank	http://www.ajb.dni.us
Career Magazine	http://www.careermag.com
Career Mosaic	http://www.careermosaic.com
CareerNet	http://www.careers.org
Career Path	http://www.careerpath.com
ERISS	http://www.eriss.com
E-Span's Interactive Employment Network	http://www.espan.com
JOBTRAK	http://www.jobtrak.com
Monster Board	http://199.94.216.71
Online Career Center	http://www.occ.com
Clearinghouses	**URL**
The Riley Guide	http://www.jobtrak.com/jobguide
The Catapult	http://www.jobweb.org/catapult/catapult.htm
Career Resources Homepage (Rensselaer)	http://www.rpi.edu/dept/cdc/homepage.html
Job Hunt, Stanford University	http://rescomp.stanford.edu/jobs.html
Other Sources	**URL**
U.S. Department of Education	http://www.ed.gov
ERIC	http://www.aspensys.com/eric2/welcome.html
U.S. Department of Labor	http://www.dol.gov
Employment & Training Administration	http://www.doleta.gov
O*NET	http://www.doleta.gov/programs/onet
Training Technology Resource Center	http://www.ttrc.doleta.gov
SKILLSNET	http://steps.atsi.edu/index.html
Chronicle of Higher Education	http://chronicle.merit.ed
CollegeView	http://www.collegeview.com
Peterson's Education Center	http://www.petersons.com
Source EDP Computer Salary Survey	http://www.espan.com/salary/salary.html

LABOR MARKET AND OCCUPATIONAL INFORMATION RESOURCES	
National LMI Sources	**Uniform Resource Locator (URL)**
Bureau of Labor Statistics Web Site	http://www.bls.gov
BLS Gopher	gopher://stats.bls.gov
BLS File Transfer Protocol (FTP)	ftp://stats.bls.gov
U.S. Census Bureau Web Site	http://www.census.gov
Census FTP	ftp://ftp.census.gov
National Center for Education Statistics (NCES) Web Site	http:///www.ed.gov/pubs/stats.html
NCES Gopher	gopher://gopher.ed.gov:10000
Department of Education Web Site	http://www.ed.gov
Education Gopher	gopher://gopher.ed.gov/11/
Media Logic	http://www.mlinet.com/mle/econdata.htm
Bureau of Economic Analysis (BEA)	http://www.bea.doc.gov
BEA STAT-USA	http://www.stat-usa.gov
ALMIS (America's LMI System)	http://www.ecuvax.cis.ecu.edu/~lmi/lmi.html
Resources for Economists	http://econwpa.wustl.edu/EconFAQ/EconFAQ.html
University of Michigan Gopher Site	gopher://una.hh.lib.umich.edu/11/ebb
NOICC Crosswalk & Data Center	http://www.profiles.iastate.edu/ided/ncdc
Federal Reserve Banks	**URL**
Atlanta	http://www.frbatlanta.org
Chicago	http://www.frbchi.org
Cleveland	http://www.clev.frb.org
Dallas	http://www.dallasfed.org
Minneapolis	http://woodrow.mpls.frb.fed.us
New York	http://www.ny.frb.org
Philadelphia	http://www.libertynet.org/~fedresrv/fedpage.html
St. Louis	http://www.stls.frb.org

Sample State Labor Market Information Internet Sites	Uniform Resource Locator (URL)
Hawaii's Labor Force and Job Data at a Glance	http://www.pixi.com/~hilfi
Louisiana Department of Labor	http://www.ldol.state.la.us
New Mexico Department of Labor	http://gsd.state.nm.us/dol/dol_home.html
NCESC Labor Market Information (North Carolina)	http://www.esc.state.nc.us/lmi/index.html
Labor Market Information Home Page (Rhode Island)	http://www.det.state.ri.us:80/webdev/lmi/lmihome.html
Vermont Labor Market Information	http://www.cit.state.vt.us/det/detlmi/lmihp.htm
Utah Labor Market Information	http://udesb.state.ut.us/lmi
Washington State LMEA	http://www.wa.gov/esd/lmea
Sample SOICC Sites	**URL**
Colorado SOICC Homepage	http://www.aclin.org/other/jobs/cosoicc
Iowa SOICC	http://www.profiles.iastate.edu/ided/isoicc
SOICC of New Hampshire	http://www.state.nh.us/soiccnh/soicchp.htm
Texas SOICC	http://www.capnet.state.tx.us/soicc
Vermont SOICC	http://www.cit.state.vt.us/det/detlmi/detvoicc/voicchp.htm
Sample Search Engines	**URL**
Alta Vista: Main Page	http://www.altavista.digital.com
Internet Sleuth	http://www.intbc.com/sleuth
Lycos Search Form	http://www.lycos.com/lycos-form.html
MetaCrawler Searching	http://metacrawler.cs.washington.edu:8080
Searching with WebCrawler	http://www.webcrawler.com
Yahoo!	http://www.yahoo.com

NOICC Training Support Center

The NOICC Training Support Center (NTSC) coordinates the National Occupational Information Coordinating Committee's training programs and conferences on a nationwide basis. NTSC provides the NOICC/SOICC Network with ongoing training capabilities, materials, and a pool of experienced trainers and resource persons for its programs and conferences.

The training center is designed to serve four primary functions in connection with major NOICC programs: product development, communication and coordination, network development and support, and training and technical support.

The NTSC operates through the Oklahoma State Occupational Information Coordinating Committee. The center is based at the Oklahoma Department of Vocational and Technical Education in Stillwater. The Oklahoma Vo-Tech agency, Oklahoma State University (OSU) Educational Television Services, and the OSU College of Education's School of Occupational and Adult Education combine resources and staff to operate the training center.

NOICC Training Support Center
Oklahoma Department of Vocational and Technical Education
1500 West Seventh Avenue
Stillwater, OK 74074
(405/743-5197)

National
Occupational
Information
Coordinating
Committee

2100 M Street, NW, Suite 156
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Telephone: 202/653-5665
FAX: 202/653-2123
e-mail: noicc@digex.net

http://www.profiles.iastate.edu/ided/ncdc/noicc.htm